APPENDIX E

Sandhill Wildlife Area Site Descriptions

Site descriptions for the Primary Sites that occur within the Sandhill Wildlife Area. See the main text for more details on site selection, methods, and definitions.

SH01. GALLAGHER FLOWAGES

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
USGS 7.5' Quadrangle:	Quail Point Flowage
Town-Range-Section:	T21N-R3E, sections 4-6
	T22N-R3E, sections 20, 28, 29, and 31-34
Size:	2110

Description of Site

The Gallagher Flowages are extensively ditched and diked peatlands. The hydrologic manipulations date from the early 1900s as part of a failed attempt to cultivate the area. A fire burned the site in the 1930s, and when the land was acquired by public agencies in the 1950s and 60s, the old ditches were plugged to create flowages to benefit waterfowl and other wildlife. In open water areas, the flowage vegetation currently consists of stands of submergent and emergent aquatic macrophytes. Away from the influences of the ditches and dikes, sedge-dominated wet meadows and shrub swamp are typical vegetation types. The boggy meadows are characterized by various sedges, Canada bluejoint grass, hardhack, and other plants adapted to saturated, acidic peat and relatively low nutrient levels. Sphagnum mosses form the substrate in some areas. Shrub swamps are composed primarily of willows, bog birch, speckled alder, bog holly, and chokeberry.

The peat generally occurs as a thin layer, over sand that was part of the bed of extinct Glacial Lake Wisconsin. The adjacent sandy uplands are mostly forested, and managed at varying intensities to benefit wildlife (emphasizing game species), recreation, and timber products. Common trees include black and white oaks, pines, aspens, and red maple. Most of the Gallagher Flowages are within the Sandhill State Wildlife Area. Wood County Forest land occurs to the south, west, and east, and there is privately owned agricultural land to the north.

Significance of Site

Rare plants and animal species have been documented here, but the highest overall value is for the large numbers of migratory birds that use the site as a staging area. Waterfowl, cranes, shorebirds, raptors, and other groups all utilize the area heavily. The wetlands also provide significant breeding habitat for a number of sensitive birds. In general, the communities have been significantly affected by hydrologic manipulations or timber harvest. Native plants remain dominant, however, and no invasives problems were noted other than local infestations of reed canary grass.

Management Considerations

No management modifications are recommended at this time. Periodic monitoring for the presence of invasive species is desirable, followed by appropriate control measures as needed. Monitoring schemes designed to track population changes in use of this area by mammals, birds (including non-game species) and herptiles are especially desirable.

SH01 - Gallagher Flowages Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Acris crepitans blanchardi	Blanchard's cricket frog	1981	S1	G5T5	END	
Chlidonias niger	black tern	1999	S3B,SZN	G4	SC/M	
Cicindela patruela huberi	a tiger beetle	1998	S3	G3T2	SC/N	
Clemmys insculpta	wood turtle	1992	S3	G4	THR	
Cygnus buccinator	trumpeter swan	1999	S1B,SZN	G4	END	
Emydoidea blandingii	Blanding's turtle	1998	S3	G4	THR	
Hemileuca sp 3	midwestern fen buckmoth	1991	S3S4	G3G4Q	SC/N	
Lycaeides melissa samuelis	Karner blue butterfly	1996	S2S3	G5T2	SC/FL	LE
Plants						
Ceratophyllum echinatum	prickly hornwort	1998	S2	G4?	SC	

SH02. NORTH BLUFF

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
USGS 7.5' Quadrangle:	Quail Point Flowage
Town-Range-Section:	T21N-R3E, sections 5-8
Size:	132

Description of Site

This site contains second-growth "Southern Dry-Mesic Forest" on the slopes and summit of a 200-foot high quartzite outcrop known locally as North Bluff. The bedrock rises abruptly from the nearly level sandy bed of extinct Glacial Lake Wisconsin. A severe fire burned this site and much of the surrounding area in the 1930s. Canopy trees include red oak, bur oak, red maple, bigtooth aspen, white pine and red pine, most of which are small. The sapling layer is composed of red maple, oak, and a few pines. There is a well-developed shrub layer of witch-hazel, maple-leaved viburnum, choke cherry, gray dogwood, brambles (*Rubus* spp.), American hazelnut, huckleberry, rose, poison-ivy, and northern bush-honeysuckle. The dominant understory herbs are Penn sedge, bracken fern, big-leaved aster, wild sarsaparilla, whorled loosestrife, starflower, and interrupted fern. Soils are Plainfield Sands and Fenwood Silt Loam.

There is an abandoned quarry at the north end of the site and a lookout tower at the summit. At the west and southeast bases of the bluff are two small old fields (of 8 and 18 acres) that are managed to maintain and promote sand prairie vegetation by periodic burning. The site is encircled by a two-track road. Beyond this there are extensive peatlands, altered by a system of dikes and ditches and currently managed for waterfowl and other wildlife.

Significance of Site

Rare invertebrates (a butterfly and a tiger beetle) have been documented near the bluff base. Protected examples of "Southern Dry-Mesic Forest" communities are uncommon in the central sands landscape, though this stand has been disturbed by logging and fire and is somewhat transitional, as it includes conifers and several "northern" understory species.

Management Considerations

Vehicular travel and use of logging equipment could easily lead to erosion on the steep sandy slopes. A consideration would be to allow the forests to mature and develop old-growth attributes. Limitations include small stand size and isolation.

SH02 - North Bluff

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Cicindela patruela huberi	a tiger beetle	1998	S3	G3T2	SC/N	
Emydoidea blandingii	Blanding's turtle	1998	S3	G4	THR	
Lycaeides melissa samuelis	Karner blue butterfly	1996	S2S3	G5T2	SC/FL	LE
Communities						
Southern Dry-mesic Forest	Southern Dry-mesic Forest	1997	S3	G4	NA	

SH03. QUAIL POINT FLOWAGE PEATLANDS

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
USGS 7.5' Quadrangle:	Quail Point Flowage
Town-Range-Section:	T21N-R3E, sections 4, 5, 8, 9, 16, and 17
Size:	906

Description of Site

This peatland is located in the bed of extinct Glacial Lake Wisconsin between Bluegrass Flowage and Quail Point Flowages within Sandhill State Wildlife Area. Historically the primary wetland community was a boggy wet meadow (Central Poor Fen) on soils classified as Cathro Mucky Peat, Dawson Peat, and Greenwood Peat. These organic soils overlie lacustrine sand deposits. The dominant meadow plants are sphagnum mosses, tussock and narrow-leaved sedges, hardhack, and woolgrass.

To the west of this relatively intact peatland, plugged ditches have created two impounded flowages. The old drainage ditches are lined with willows (e.g., slender willow) and speckled alder. Other characteristic plant species include Canada bluejoint grass, several manna grasses (*Glyceria spp.*), various sedges (*Carex, Scirpus, Eriophorum*), and the invasive reed canary grass. Beds of emergent, floating-leaved, and submergent aquatic macrophytes occupy some of the shallow open water areas. Rare plants and animals are resident here.

The area is managed mainly for waterfowl. Site hydrology has been affected by ditch, dike, and road construction. The open meadow supports many resident birds that prefer this type of habitat, including Sedge Wren, Swamp Sparrow, Northern Harrier. Golden-winged Warblers are resident along the brushy peatland margins.

Significance of Site

The site supports several rare species and receives significant use by migratory waterfowl and other birds.

Management Considerations

Understanding the impacts of hydrologic alterations may be important to certain sensitive species, including herps, nesting birds, and invertebrates. Other than periodic monitoring of selected taxa, no management recommendations are offered at this time. Populations of invasive species also need to be monitored and controlled as appropriate and feasible.

SH03 - Quail Point Flowage Peatlands

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Acris crepitans blanchardi	Blanchard's cricket frog	1981	S1	G5T5	END	
Chlidonias niger	Black Tern	1999	S3B,SZN	G4	SC/M	
Clemmys insculpta	wood turtle	1992	S3	G4	THR	
Diadophis punctatus edwardsii	northern ringneck snake	1990	S3?	G5T5	SC/H	
Emydoidea blandingii	Blanding's turtle	1998	S3	G4	THR	
Hemileuca Sp 3	midwestern fen buckmoth	1991	S3S4	G3G4Q	SC/N	

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Ixobrychus exilis	Least Bittern	1999	S3B,SZN	G5	SC/M	
Lycaeides melissa samuelis	Karner blue butterfly	1993	S2S3	G5T2	SC/FL	LE
Podiceps grisegena	Red-necked Grebe	1999	S1B,SZN	G5	END	
Plants						
Potamogeton diversifolius	water-thread pondweed	1997	S2	G5	SC	
Thelypteris simulata	bog fern	1997	S3	G4G5	SC	
Communities						
Central Poor Fen	central poor fen	1997	S3		NA	

SH04. SANDHILL RIFLE RANGE

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
USGS 7.5' Quadrangle:	Quail Point Flowage
Town-Range-Section:	T21N-R3E, sections 4 and 5
Size:	78

Description of Site`

This site consists of several low, forested ridges within Sandhill State Wildlife Area that have been used as sources of sand and gravel. The quarrying has created areas of unvegetated sand and gravel, and some of the pits contain water. The unusual site conditions have attracted several uncommon and rare species.

Significance of Site

Though the site is far from pristine it supports several rare invertebrates that require open or partially open conditions. Blanding's Turtles have also been recorded from this site during their breeding season.

Management Considerations

Significance of the rare species populations needs to be determined by the NHI Zoologist and Sandhill staff. At this time, limiting management activities to those that have created and will maintain the conditions that are favorable to these species is the most prudent course.

SH04 - Sandhill Rifle Range Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Acris crepitans blanchardi	Blanchard's cricket frog	1984	S1	G5T5	END	
Cicindela lepida	little white tiger beetle	1998	S2S3	G4	SC/N	
Emydoidea blandingii	Blanding's turtle	1998	S3	G4	THR	
Lycaeides melissa samuelis	Karner blue butterfly	1996	S2S3	G5T2	SC/FL	LE
Orphulella pelidna	spotted-winged grasshopper	1998	S1?	G5	SC/N	

SH05. BISON PRAIRIE

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
USGS 7.5' Quadrangle:	Quail Point Flowage
Town-Range-Section:	T21N-R3E, sections 3 and 4
	T22N-R3E, sections 33 and 34
Size:	496

Description of Site

This site, located within Sandhill State Wildlife Area, is dedicated to sand prairie/oak barrens restoration. It occurs on the nearly flat, poorly drained bed of an extinct glacial lakebed, about one-mile west of the Yellow River. The featured community type is quite open and prairie-like, and grades into more brushy vegetation that has a higher density of oak grubs and scattered pine. In the most intact part of site, the dominant grasses are big and little bluestem, indian grass, and Canada bluegrass (an exotic); common forbs include goldenrods, wild lupine, asters, bird's-foot violet, and the exotic sheep sorrel. To the southwest, the more open barrens grades site grades into Hill's oak barrens with a Penn sedge understory with sweet fern, blueberry, brambles, and little other floristic diversity. Parts of the site have been cultivated and grazed (by cattle) in the past. The site was recently burned via prescription to reduce woody cover. Areas with high canopy cover are also very brushy, with scattered oak trees and numerous oak grubs. The southeastern edge of the site grades into a wetland of shrub swamp and sedge meadow. Wetland dominants include bog birch, willows, sedges and Canada bluejoint grass.

Significance of Site

Site is significant in that it represents a hands-on attempt to restore rare biotic communities – sand prairie and oak barrens – using a combination of innovative methods. Several rare species are present, including the federally Endangered Karner blue butterfly, the frosted elfin, and dwarf milkweed.

Management Considerations

The site is actively managed using tree harvest, mechanical brushing, prescribed fire, and grazing - by a captive herd of bison. This should continue, unless monitoring at the community or rare species levels indicates that changes may be needed. The two track roads, bison trails, wallows, and watering holes create disturbed habitats; these should be monitored periodically to check for invasive species (and certain rare natives that might utilize such habitats, such as fameflower).

SH05 - Bison Prairie Element Occurrences

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status	US ESA Status
Animals						
Callophrys irus	frosted elfin	1996	S1	G3	THR	
Emydoidea blandingii	Blanding's turtle	1998	S3	G4	THR	
Erynnis persius	persius dusky wing	1993	S2	G5	SC/N	
Lycaeides melissa samuelis	Karner blue butterfly	1997	S2S3	G5T2	SC/FL	LE
Plants						
Asclepias ovalifolia	dwarf milkweed	1997	S3	G5?	THR	
Communities						
Sand Prairie	Sand Prairie	1997	S2		NA	

SH06. YELLOW RIVER BOTTOMS - BABCOCK

Location

Subsection:	Central Wisconsin Sand Plain (222Ra)
USGS 7.5' Quadrangle:	Babcock, Quail Point Flowage
Town-Range-Section:	T21N-R3E, sections 10, 11, 14, and 15
Size:	300

Description of Site

This site encompasses a mature deciduous floodplain forest along the Yellow River northwest of Babcock, within Sandhill State Wildlife Area. Common trees include silver and red maples, river birch, basswood, and red oak. The canopy is composed of large trees, with a good mix of size and age classes. There are few shrubs except for thickets of prickly ash. Saplings of red oak and basswood are present. The diverse herblayer includes spring ephemerals such as trout-lily, and rich site indicators such as Virginia waterleaf, woodland phlox, and green dragon are all common. This assemblage of understory plants is highly localized and relatively rare within the study area. At least one state threatened bird is present.

Adjacent forests have been periodically logged, at varying intensities. The Yellow River, which flows through the site, is a stream of extremely low gradient, with many meanders, oxbows, sloughs, and ponds. The soils are seasonally saturated or inundated, composed of glacial lake deposits and alluvial sediments. Local land uses include wildlife protection, recreation, and commercial timber production. Pine plantation monocultures occur on some of the nearby uplands.

Significance of Site

The site is relatively undisturbed, mature, has significant old-growth attributes, and a rich flora. At least one rare species has been documented here, and others, especially animals, are likely to occur. This stretch of the Yellow is an important component of a highly significant riverine corridor that is threatened by intensive timber harvest and, in some areas, cranberry farm development.

Management Considerations

Maintenance of mature, intact stands of Floodplain Forest is a high priority along the Yellow River corridor. Other opportunities are limited at this time and appear to be dwindling. It is recommended that this site be permitted to continue developing old-growth attributes, while retaining high canopy closure, to ensure that there are locations where sensitive animals preferring or dependent on intact stands of older forest can find secure habitat.

SH06 - Yellow River Bottoms

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status
Animals					
Cicindela patruela huberi	a tiger beetle	1970	S3	G3T2	SC/N
Clemmys insculpta	wood turtle	1992	S3	G4	THR
Emydoidea blandingii	blanding's turtle	1998	S3	G4	THR
Rana catesbeiana	bullfrog	1998	S3	G5	SC/H
Plants					
Platanthera flava var *herbiola*	pale green orchid	1994	S2	G4T4Q	THR
Communities					

Scientific Name	Common Name	Date	State Rank	Global Rank	WI Status
floodplain forest	floodplain forest	1997	S3	G3?	NA